

Changes of State Answers



Increasing temperature

What is this process called? **Melting**

Describe what is happening to the particles:

Heat energy causes them to vibrate more.

This results in the bonds between particles getting looser, forming a liquid.

What is melting point? **The temperature at which a solid changes into a liquid.**

What is the melting point of water? **0°C**

What is this process called? **Evaporation or vaporisation.**

Describe what is happening to the particles:

The particles to vibrate even more, and eventually the bonds between them are broken.

Small bubbles of gas will form in the liquid. When enough heat is added, these get big enough to float to the surface & bubbles of gas escape into the air.

What is boiling point? **The temperature at which a liquid becomes a gas.**

What is the boiling point of water? **100°C**

SOLID



LIQUID



GAS



What is this process called? **Solidification or freezing**

Describe what is happening to the particles:

The liquid loses energy (e.g. loss of heat) and the particles start to vibrate less.

The bonds between the particles become strong enough to keep them together in a fixed position.

At what temperature does water freeze? **0°C**

What is this process called? **Condensation**

Describe what is happening to the particles:

Gas particles lose energy. Particles begin to move more slowly & bonds form between them.

Give an example of this process:

Breathing out on a cold day – water vapour condenses & forms water droplets.

Sublimation is when: **solid changes directly into a gas without going through a liquid state. Or when a gas changes directly into a solid.**

An example is: **when dry ice (frozen carbon dioxide) can turn directly into carbon dioxide gas (used to produce fog effects in movies).**

Decreasing temperature